

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
20 October 2005 (20.10.2005)

PCT

(10) International Publication Number
WO 2005/098973 A1

(51) International Patent Classification: H01L 33/00

KIM, Choong-Youl [KR/KR]; 302ho 967-1 Munh-ung-dong, Buk-gu, Gwangju-si 500-110 (KR).

(21) International Application Number:
PCT/KR2005/001009

(74) Agent: HAW, Yong-Noke; 8th Fl., Songchan bldg., 642-15 Yoksam-dong, Gangnam-gu, Seoul 135-080 (KR).

(22) International Filing Date: 7 April 2005 (07.04.2005)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AB, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NL, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: Korean
(26) Publication Language: English
(30) Priority Data:
10-2004-0023696 7 April 2004 (07.04.2004) KR

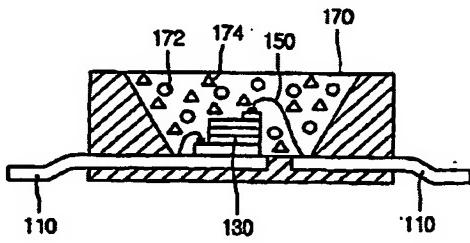
(71) Applicants (for all designated States except US): LG INNOTEK CO., LTD [KR/KR]; 14th Fl., Hansol Bldg., 736-1, Yoksam-dong, Gangnam-gu, Seoul 135-983 (KR). KOREA RESEARCH INSTITUTE OF CHEMICAL TECHNOLOGY [KR/KR]; 100 Jang-dong, Yuseong-gu, Daejeon-si 305-343 (KR).
(72) Inventors; and
(73) Inventors/Applicants (for US only): KIM, Chang-Hae [KR/KR]; 138-1402 Hanvit Apt., Uecean-dong, Yusung-gu, Daejeon-si 305-755 (KR). PARK, Joungh-Kyu [KR/KR]; 7-305 Gongjiong Gwanri Apt., 431 Duryoung-dong, Yusung-gu, Daejeon-si 305-340 (KR). KIM, Sung-Kee [KR/KR]; 103-307 Chundan Moe Apt., 757-5 Wolgye-dong, Gwangsan-gu, Gwangju-si 506-821 (KR).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SE, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LIGHT EMITTING DEVICE AND PHOSPHOR FOR THE SAME



(57) Abstract: Provided is a light emitting device including a light emitting chip, and a phosphor through which a light emitting from the light emitting chip at least partially passes such that the light is converted into lights having at least two different wavelengths and emitted. The phosphor includes a silicate phosphor having a chemical formula of $Sr_3-xSiO_5:Eu^{2+}$ ($0 < x < 1$) to excite a second light having a first centered emission peak using the first light and a sulfide phosphor having a chemical formula of $Sc_{1-x}Ga_2S_4:Eu^{2+}$ ($0.001 < x < 1$) to excite a third light having a second centered emission peak using the first light.

WO 2005/098973 A1